A N

The Occupational Health and Safety Heritage Grant Program is one of the Occupational Health and Safety Division's major prevention programs. Established in 1981, through a $10 million capital investment of the Alberta Heritage Savings Trust Fund, the program has a unique mandate: to support education and research projects which address health and safety problems related to work. No other program in Alberta has this mandate. No other source of funds is available to support the initiatives stimulated and sponsored through this program.

The Grant Program is now in its eighth year of operation. Through this program, dynamic educational and research programs and organizations concerned with health and safety issues now operate in Alberta universities and colleges. The numbers of Albertans trained in occupational medicine, occupational nursing and occupational hygiene technology have increased significantly.

Alberta apprentices and workers in high-hazard occupations are receiving up-to-date training in safe work procedures through materials developed with Grant Program funds. A resource base of researchers, new knowledge and new training materials in the occupational health and safety field has begun to grow in Alberta.

PROGRAM DESCRIPTION

A great variety of organizations and individuals have designed and carried out Occupational Health and Safety Heritage Grant Program projects. These include Alberta industry and safety associations, educational institutions, businesses, unions, non-profit societies, and individuals. Based on the 1985 recommendation of the Standing Committee on the Alberta Heritage Savings Trust Fund Act, special emphasis has been placed on involving post-secondary educational institutions.

Applications are evaluated on a competitive basis by the Grant Steering Committee. The Committee is a panel of four public and seven Alberta government representatives who assess applications and make funding recommendations. The Committee is assisted in its evaluation by technical and peer group reviews obtained for each application.

Most approved projects are funded for one year. Exceptional projects of a large scale and complex nature may receive funding over a longer period.

The Grant Program is administered by program staff comprising an administrator, a research officer and a secretary. Staff monitor the progress of funded projects through telephone calls, correspondence and site visits. Staff throughout the Occupational Health and Safety Division provide valuable guidance to grant recipients on the design and development of their projects and help to promote the outcomes of completed projects.

PROGRAM STATISTICS 3

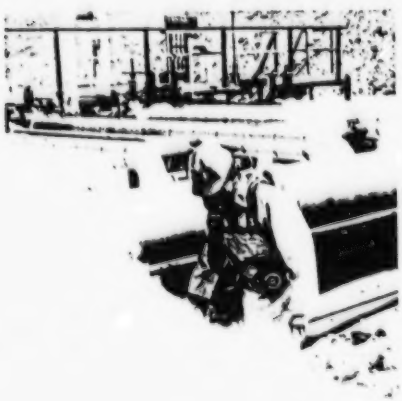
Figure A (page 8) illustrates the Grant Program's legislative appropriations and expenditures from 1981 to 1988. Both have varied widely over the years. Appropriations and expenditures are subject to Treasury Board guidelines. In November 1986 a government-wide spending freeze was announced and no new projects were funded during the remainder of that fiscal year.

During 1987, the Occupational Health and Safety Division re-examined its research and education funding priorities.

High priority health and safety problems were identified, and new priorities were set. Organizations and individuals able to conduct projects which address these problems were encouraged to make submissions to the Grant Program.

Only high priority projects received funding. Fewer applications were approved this year compared to all previous years. No new projects were approved until October, when a spending restraint ended and the new priorities were approved. The number of projects received and approved, by fiscal year, are illustrated in Figure B (page 9). The number of approved projects by project type - education, research or conference - are shown in Figure C (page 10).

Several multi-year projects are nearing their final year of funding. Funding for more than one year was required because of their large scale and complex nature. Two multi-year projects are described below to demonstrate their achievements.



Protective Work Clothing

Alberta are developing methods oil and gas companies can use to select appropriate protective work clothing. Interest in flame resistant work clothing, as a way to protect workers from flash fires, has grown considerably. Outfitting workers in flame resistant work clothing is expensive, and companies buying clothing for the first time or assessing a new brand of clothing face a confusing marketplace. There is no standard for flame resistant workwear in either Canada or the United States. Companies need to take into account performance characteristics such as resistance to flame, acid, heat, abrasion and weather, as well as static electricity generation. They must also consider the features the wearer will like or dislike: the fit and feel of the fabric, how warm it is and how well it washes.

Drs. Betty Crown and Katherine Rigakis are conducting laboratory tests of flame resistant clothing, and two groups of workers are field testing both winter and summer clothing. The research will produce a set of tests industry can use to assess which clothing will be the most suitable to the conditions at a particular work site.

Predicting the Path of Gas Clouds

Where should living quarters be placed on a drilling site? Should residents near a leaking pipeline be evacuated? From what direction should workers approach the source of leaking gas?

Dr. David Wilson is heading research at the University of Alberta which will help to answer these questions. Currently little is known about the characteristics of a gas cloud within a few hundred metres of its source, which is the area workers must enter to control a leak.

Dr. Wilson is developing a computer program which will predict the path of a gas cloud in the event of a leak. The cloud's path can be predicted based upon such information as the concentration of the gas, weather conditions and the terrain. The software will assist in the design of safer work sites, reducing the risk of exposure to harmful concentrations of gas. Industry is participating in this project.

PROMOTION OF PROJECT RESULTS 5

Program staff continued to promote the findings and results of completed projects during the 1987-88 year. Final reports for completed projects were reviewed by health and safety practitioners in the field and by potential users of the project results.

Articles on completed projects were featured in issues of *Occupational Health & Safety Magazine*, which has a circulation of 75 000 employers and workers in Alberta. All final reports have been placed in the Occupational Health and Safety Library for public circulation. Films and videotapes are listed in the Division's film catalogue and placed in the film library. The library serves industry and the public throughout the province.

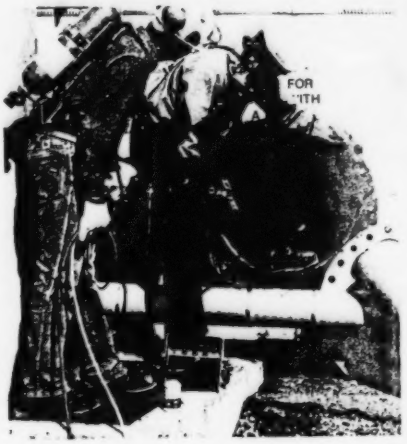
Over 700 copies of a report describing all ongoing and completed projects were distributed to the public. Requests for reports on completed projects have increased 43 percent from the previous year. The reports are requested by a variety of groups and individuals including: occupational health nurses and safety practitioners employed in industry, organizations interested in occupational health and safety (such as hospital associations), and individual workers and organized labour. Individuals learn about funded projects through the status report, *Occupational Health & Safety Magazine*, the Canadian Centre for Occupational Health and Safety data base and the news media.

Grant recipients promote the results of their own projects in a number of ways. Information on the promotional activities carried out by grant recipients is collected regularly by program staff. Generally, the grant recipient is contacted one year after a project is completed. A sample of recipients reported that they have distributed over 63 500 copies of project-produced material. The material includes films, videotapes, research reports, training materials and conference proceedings. Projects have also been promoted through over 50 presentations.

FOLLOW-UP TO THE PROGRAM EVALUATION

Collecting information on promotional activities carried out by grant recipients was one of the recommendations made as the result of an evaluation of the Grant Program. In early 1986, a major evaluation study was initiated by the Occupational Health and Safety Division to examine the operation and impact of the Grant Program. As a result of another recommendation, a small computer system was developed to track information on grant applications and awards. The system is now in place and is improving the timeliness and accuracy of responses to information requests.

The evaluation consultants, T.D. Weiden and Associates Ltd., concluded that the Grant Program has played a major role in: stimulating non-government sectors to take action to improve workplace health and safety; establishing permanent programs in industry, labour and educational institutions to address occupational health and safety concerns; developing new strategies and materials to prevent work-related illnesses and injuries; and increasing the numbers and expertise of individuals trained in occupational health and safety.

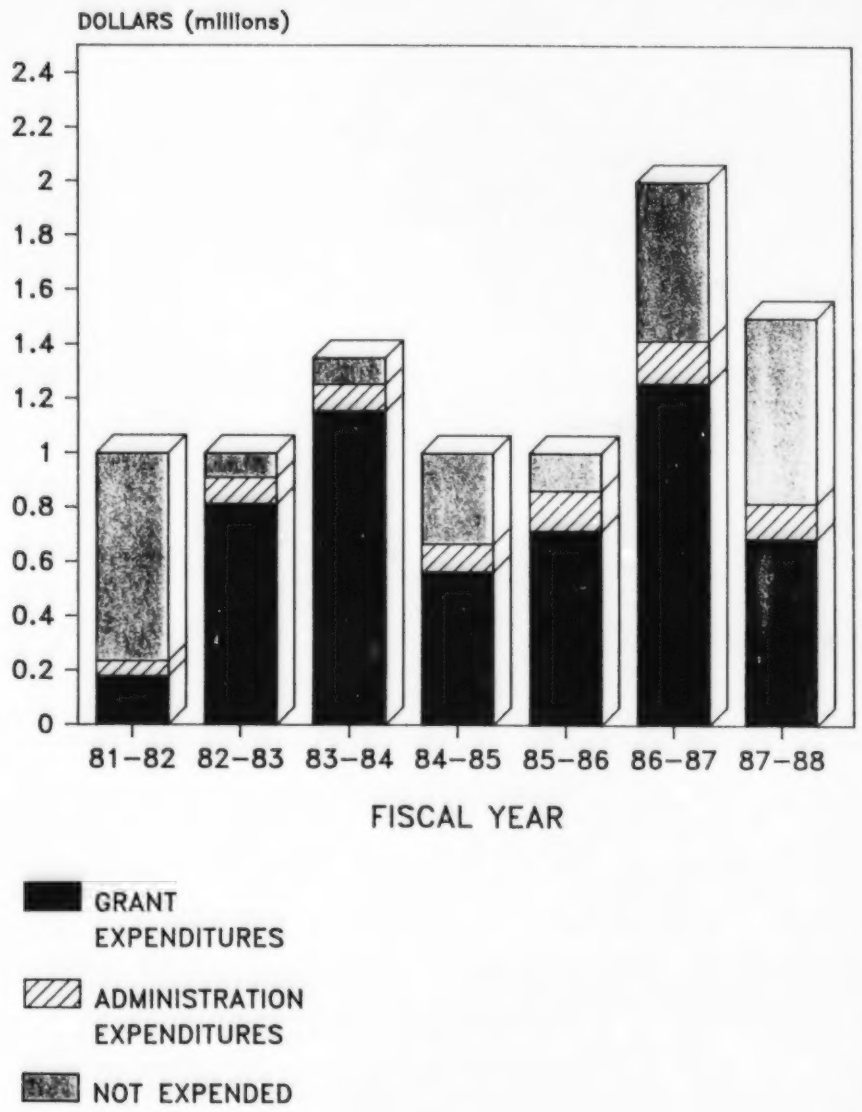


The evaluators warned against discontinuing the Grant Program in 1989 without an alternative mechanism for supporting the initiatives established. The impressive gains made through this program would erode without some similar source of funds. The program is now scheduled to continue until 1990/91, in order to expend the original $10 million investment.

FIGURES

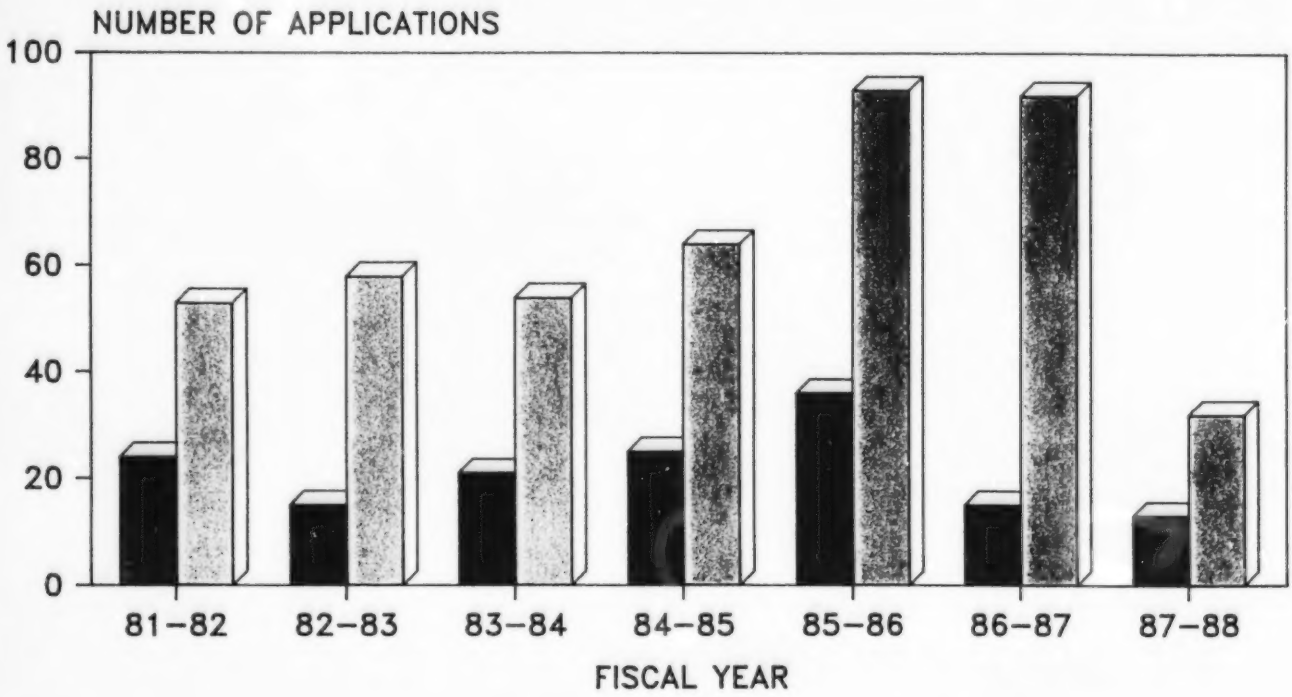
FIGURE A

Program Expenditures
April 1981 - March 1988



F I G U R E B 9

Applications Received
And Approved
April 1981 - March 1988



APPROVED
RECEIVED

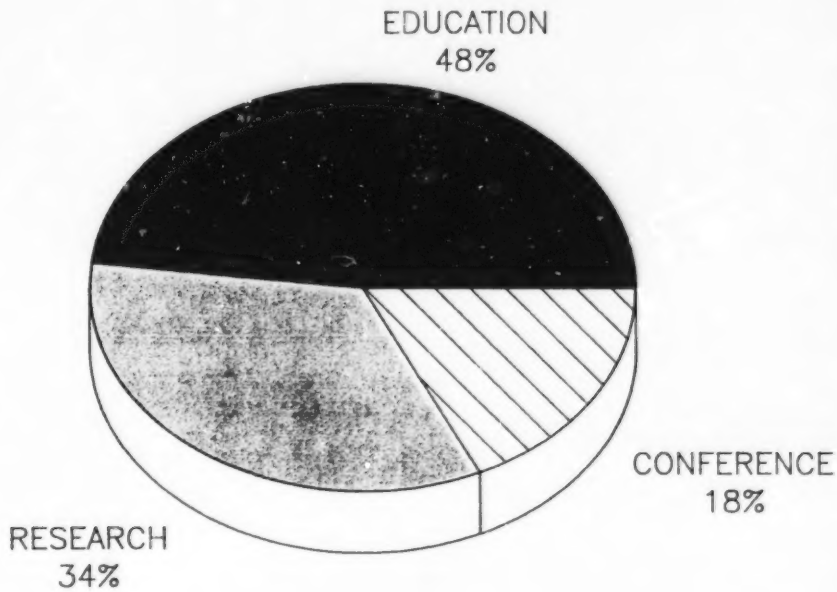
Note:

Total number of applications approved: 149

Approved applications are counted in fiscal year received

Approved Projects By Grant Type

April 1981 - March 1988



APPENDICES

APPENDIX I

Types of Awards

The prevention of injuries and diseases related to work requires a better understanding of human behaviour and hazards on the job, along with the development of innovative techniques and strategies to solve health and safety problems. Several types of awards are made to address the range of problems.

Education Grants

Three types of education projects are funded. **Program Development Awards** are used to develop innovative educational programs which emphasize the recognition, avoidance and control of hazards related to work. Funds may also be provided to evaluate the effectiveness of new educational programs. Program Development projects are the most common type of education grant awarded.

Visiting Scholar Awards sponsor scholars or researchers travelling to Alberta for the purpose of information exchange through seminars, lectures and collaboration with Albertans in the development of new techniques or approaches in the field of occupational health and safety.

Training Assistance Awards provide support for individuals to pursue further education in disciplines and subjects related to occupational health and safety, such as occupational hygiene or occupational health nursing.

Research Grants

Research grants support scientific activities designed to increase the understanding of occupational health and safety problems, and to develop and assess new strategies for dealing with problems. Research is conducted to fill gaps in knowledge or provide information required to solve problems. With new knowledge, it is often possible to develop both technical and procedural solutions to safety problems. Solutions may include the design of new equipment and the development of safe operating guidelines and procedures.

Conference Grants

Conference awards provide partial support for conferences in Alberta which increase understanding and awareness of health and safety issues related to work. Grant funds are normally used to defray the costs of bringing experts to the province, and of planning activities. Albertans may also receive support to attend conferences which enhance the knowledge and expertise of occupational health and safety practitioners in the province.

Projects Approved Between April 1987 and March 1988

Education Projects

Industrial Tower Entry and Rescue Program
Lakeland College ($90 000)

Lakeland College is developing a course for workers who enter confined spaces and may encounter toxic gases or oxygen deficient atmospheres. The course will provide hands-on training in a mobile vertical tower. The tower will simulate many industrial environments, such as those found in refineries, gas plants and pulp mills. Workers will learn practical skills, such as movement through a confined space, testing for hazardous gases, use of respiratory protective equipment and emergency procedures, at their own work sites.

Business - Phase III
Canadian Organization of Small Business ($48 540)

The Canadian Organization of Small Business is completing a guidebook on occupational health and safety. It will assist the small business owner to identify safety problems and to select methods to eliminate such problems.

Taxi Driver Safety Training Program - Phases II-III
Taxi Industry Task Group and RGC Consultants Ltd. ($135 100)

A safety program is being developed for Alberta taxi drivers on how to deal with dangerous or potentially dangerous people and situations. In Phase II, knowledgeable persons inside and outside of the taxi industry identified the skills and knowledge which should be included in the course. In Phase III, a 45-minute videotape and accompanying workbook suitable for individual or classroom instruction are being developed.

Alberta Farm Equipment Manufacturers Safety Program
Prairie Implement Manufacturers Association ($80 455)

The Association has engaged a safety consultant to conduct safety audits for some 80 Alberta firms which manufacture farm equipment. Interviews with the owners are also being conducted. The safety consultant will recommend improvements to existing health and safety programs and will recommend effective new programs.

Research Projects

A Multidisciplinary Assessment of Low Doses of Hydrogen Sulfide - Phase II
Faculty of Medicine, University of Calgary ($173 300)

Dr. Sheldon Roth and colleagues continue to study whether low levels of hydrogen sulfide alter the structure and function of various tissues. They are examining how extended, low levels of exposure relate to behaviour, neurological function, tissue biochemistry and genetics. Results will be used to develop better treatments for hydrogen sulfide poisoning, and ways to protect the health of workers who may be exposed to low levels of hydrogen sulfide.

Head Injury, Memory Impairment and Occupational Safety - Phase II
Department of Psychology, University of Alberta ($46 750)

Head injury can produce subtle memory and cognitive impairments. Drs. Allen Dobbs and Brendan Rule are continuing to develop and validate a battery of tests, reflecting recent research in psychology, to detect such impairments. Similar tests may be useful in assessing the effects of exposure to solvents and hydrogen sulfide. These tests could help to improve job counselling and placement to avoid unsafe or impaired performance on the job. They may also help to improve the adjudication of Workers' Compensation Board claims, and indicate when it is safe for a worker to return to the job.

Illness Experience of Fire Fighters - Phase II
Department of Health Services Administration and Community Medicine, University of Alberta ($47 700)

Drs. Tee Guidotti and John Markham continue their research on whether fire fighters experience a greater incidence of certain illnesses due to the nature of their occupation. The mortality profile of fire fighters is being compared with that of other male populations of Albertans. The researchers are examining the distribution of cause of death, especially with respect to lung cancer, chronic obstructive lung disease and cardiovascular disease.

Recycling and Disposal of Chemical Wastes - Phase VI
Department of Chemistry, University of Alberta ($71 400)

Dr. Margaret-Ann Armour and her colleagues are continuing their research into the development of safe and practical methods to dispose of or recycle small quantities of waste or spilled hazardous chemicals. In the current phase, chemotherapy drugs and other carcinogenic chemicals are being studied. The methods will benefit hospital workers, as well as workers in research, teaching, analytical and quality control laboratories. The disposal methods take into account Alberta regulations and conditions.

Systematic Assessment of Protective Clothing for Alberta Workers - Phases II-III
Department of Clothing and Textiles, University of Alberta ($133 500)

Drs. Betty Crown and Katherine Rigakis, in conjunction with industry, are completing the development of an assessment system for protective work clothing which includes both laboratory tests and wear trials. Industry will be able to evaluate the suitability of protective clothing for workers and to select the type of clothing most appropriate for each job and work site.

Neurological Actions of Sulfide - Phase II
Department of Pharmacology, University of Alberta ($97 600)

Dr. Rhoderic Reiffenstein and colleagues are examining the effects of sulfide on neurological functioning and in selected behavioural measures. The results will provide information which may help to improve treatment following hydrogen sulfide poisoning and lead to more effective preventive procedures.

Predicting Exposure Hazards from Toxic Gas Releases - Phase II
Department of Mechanical Engineering, University of Alberta ($38 400)

Work sites can be designed to minimize the hazards of a gas leak to workers and the public. When an accidental gas release occurs, the gas cloud's behaviour can be predicted based on information such as the gas concentration, weather conditions and terrain. Dr. David Wilson and colleagues are completing the development of computer programs which will predict the path of a gas cloud in the event of a leak. The information will be applied in the design of safer industrial plants and other work sites. It will also improve evacuation and containment planning.

Fire Spread Through Stratified Fuel-Air Mixtures - Phase III
Department of Mechanical Engineering, University of Calgary ($44 000)

Dr. Ghazi Karim and colleagues are completing their study of the flammable zone around a fuel vapour leak to determine fire and explosion hazards. The flammability limits, the location of the flammable zone, the rate of fire spread and the time required for the zone to become non-flammable are being examined.

Conference Awards

Symposium on Immunotoxicology - Phase II
Faculty of Medicine, University of Alberta ($14 900)

The researchers completed the initial planning and development of the Second International Symposium on the Immunological System. At this time it is uncertain when the conference will be held, due to coordination difficulties with an international agency. The emphasis of the meeting will be on the human health effects of occupational and environmental exposures.

Backs for the Future, 1988
AFL Workers' Health Centre ($750)

An occupational health nurse from the Workers' Health Centre attended a national conference, "Backs for the Future, 1988," which was held in Calgary. The information gained at the conference has been incorporated in the Centre's back care programming.

Grant Steering Committee

The Grant Steering Committee was established in April 1981 by the Minister responsible for Workers' Health, Safety and Compensation, to ensure that a broad range of perspectives and expertise contributed to development of the Grant Program. Following a recommendation of the Standing Committee on the Alberta Heritage Savings Trust Fund Act, four public members were appointed to the Committee in January 1985.

The Committee reviews applications for grants and makes recommendations regarding funding. The Committee also advises the Minister responsible for Occupational Health and Safety generally on matters related to operation of the program. Such matters may include program administration, funding priorities and promotional activities.

Between April 1981 and March 1988 the Committee met 63 times to review and make recommendations on program guidelines, funding criteria and grant applications.

On March 31, 1988, committee membership included four public representatives and seven representatives from six provincial government departments and agencies.

PUBLIC MEMBERS

Labour Representatives

Mr. S. Lee, Building Trades Council (retired)
Edmonton

Mr. P. Oakes, United Steelworkers of America
Grande Cache

Employer Representatives

Mr C. Delbridge, Brockham Oilwell Servicing (1986) Ltd.
Edmonton

Mr. K. McBeth, Oilfield Servicing (retired)
Edmonton

ADVANCED EDUCATION

Mr. W. Novasky, Director, Program Coordination Branch

CAREER DEVELOPMENT AND EMPLOYMENT

Mr. J. McLafferty, Manpower Planning Consultant

LABOUR

Mr. A. Kennedy, Assistant Deputy Minister, General
Safety Services Division

COMMUNITY AND OCCUPATIONAL HEALTH

Mr. W. Rozel, Executive Director, Work Site Services

Dr. J. Kalnas, Director, Medical Services Branch

PERSONNEL ADMINISTRATION

Ms. B. Ireland, Manager, Occupational Health and Safety Branch

WORKERS' COMPENSATION BOARD

Mr. P. Griffin, Executive Director, Administration